

SEQUENCE LISTING



<110> Ipsen, Hans Henrick
Spangfort, Michael Dho
Larsen Jorgen Nedergaard

<120> NOVEL RECOMBINANT ALLERGENS

<130> 4305/1E144 US1

<140> 09/270,910

<141> 1999-03-16

<150> 60/078,371

<151> 1998-03-18

<160> 40

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 1

aattatgaga ctgagaccac ctctgttatc ccagcagctc g 41

<210> 2

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 2

ttaatactct gactctggtg gagacaatag ggtcgtcgag c 41

<210> 3

<211> 23

<212> DNA

<213> Artificial Sequence

<223> primer

<400> 3

tgagaccccc tctgttatcc cag 23

<210> 4

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

B1

<400> 4
atactctgac tctgggggag aca 23

<210> 5
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 5
gttgccaacg atcag 15

<210> 6
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 6
tgagaccccc tctgttatcc cag 23

<210> 7
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 7
acagaggggg tctcagtctc ata 23

<210> 8
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 8
gataccctct ttccacaggt tgcaccccaa g 31

<210> 9
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 9
acctgtggaa agagggtatc gccatcaagg a 31

<210> 10

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 10
aacatttcag gaaatggagg gcc 23

<210> 11
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 11
tttcctgaaa tgttttcaac act 23

<210> 12
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 12
ttaagaacat cagctttccc gaa 23

<210> 13
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 13
agctgatgtt cttaatgggt cca 23

<210> 14
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 14
ggaccatgca aacttcaa at aca 23

<210> 15
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> primer

<400> 15

agtttgcacgt gtccaccta tca 23

<210> 16

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 16

tttccctcag gcctcccttt caa 23

<210> 17

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 17

aggcctgagg gaaagctgat ctt 23

<210> 18

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 18

tgaaggatct ggagggcctg gaac 24

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 19

ccctccagat ccttcaatgt ttcc 24

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 20

ggcaactggt gatggaggat ccat 24

<210> 21
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 21
ccatcaccag ttgccactat cttt 24

<210> 22
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 22
catgccatcc gtaag 15

<210> 23
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 23
accacagcct ccagcgaaga atatgaaaaa tttggtatgg a 41

<210> 24
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 24
tggtgtcgga ggtcgcttct tataacttttt aaaccatacc t 41

<210> 25
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 25
ccagcggcta atatgaaaaa t 21

<210> 26
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 26
gtcggagggtc gccgattata c 21

<210> 27
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 27
ggctaatacaa tgtcaatatg gtcacgatac ttgcagggat g 41

<210> 28
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 28
ccgattagtt acagttatac cagtgcctatg aacgtcccta c 41

<210> 29
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 29
tgtcaagctg gtcacgatac t 21

<210> 30
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 30
ttagttacag ttcgaccagt g 21

<210> 31
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 31
ccagcggcta atatgaaaaa t 21

<210> 32
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 32
catattagcc gctggaggct g 21

<210> 33
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 33
tgtcaagctg gtcacgatac t 21

<210> 34
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 34
gtgaccagct tgacattgat t 21

<210> 35
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 35
attcatcagc tgcgagatag g 21

<210> 36
<211> 480
<212> DNA
<213> betula verrucosa

<400> 36
ggtgtgttta attatgagac tgagaccacc tctgttatcc cagcagctcg actgttcaag 60
gcctttatcc ttgatggcga taacctcttt ccaaagggtg caccccaagc cattagcagt 120
gttgaaaaca ttgaaggaaa tggagggcct ggaaccatta agaagatcag ctttcccga 180
ggcctccctt tcaagtacgt gaaggacaga gttgatgagg tggaccacac aaacttcaaa 240
tacaattaca gcgtgatcga gggcggtccc ataggcgaca cattggagaa gatctccaac 300
gagataaaga tagtggcaac ccctgatgga ggatccatct tgaagatcag caacaagtac 360
cacaccaaag gtgaccatga ggtgaaggca gagcagggtta aggcaagtaa agaaatgggc 420
gagacacttt tgagggccgt tgagagctac ctcttggcac actccgatgc ctacaactaa 480

<210> 37

<211> 159
 <212> PRT
 <213> betula verrucosa

<400> 37

Gly Val Phe Asn Tyr Glu Thr Glu Thr Thr Ser Val Ile Pro Ala Ala
 1 5 10 15
 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys
 20 25 30
 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn Gly
 35 40 45
 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
 50 55 60
 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
 65 70 75 80
 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
 85 90 95
 Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser
 100 105 110
 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
 115 120 125
 Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
 130 135 140
 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
 145 150 155

<210> 38
 <211> 615
 <212> DNA
 <213> vespula vulgaris

<400> 38

aacaattatt gtaaaataaa atgtttgaaa ggaggtgtcc atactgcctg caaatatgga 60
 agtctttaaac cgaattgagg taataaggta gtggtatcct atggtctaac gaaacaagag 120
 aaacaagaca tcttaaagga gcacaatgac tttagacaaa aaattgcacg aggattggag 180
 actagaggta atcctggacc acagcctcca gcgaagaata tgaaaaattt ggtatggaac 240
 gacgagttag cttatgtcgc ccaagtgtgg gctaatacaat gtcaatatgg tcacgatact 300
 tgcagggatg tagcaaaata tcaggttgga caaacgtag ccttaacagg tagcacggct 360
 gctaaatacg atgatccagt taaactagtt aaaatgtggg aagatgaagt gaaagattat 420
 aatcctaaga aaaagttttc gggaaacgac tttctgaaaa ccggccatta cactcaaag 480
 gtttgggcta acaccaagga agttggttgt ggaagtataa aatacattca agagaaatgg 540
 cacaaacatt accttgtagt taattatgga cccagcggaa actttaagaa tgaggaactt 600
 tatcaaacia agtaa 615

<210> 39
 <211> 204
 <212> PRT
 <213> vespula vulgaris

<400> 39

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
 1 5 10 15
 Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
 20 25 30
 Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His
 35 40 45
 Asn Asp Phe Arg Gln Lys Ile Ala Arg Gly Leu Glu Thr Arg Gly Asn

β

<211>38

<212> DNA

<213> Artificial Sequence

$\langle 220 \rangle$

<223> primer

<400> 40

ccgctcgaga aaagaaacaa ttattgtaaa ataaaatg